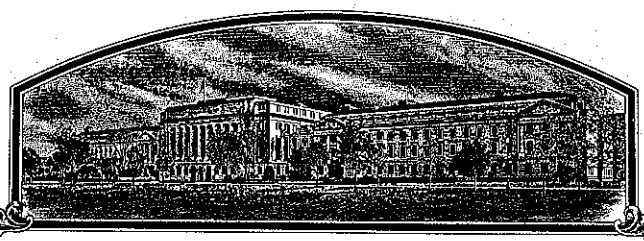

No. 9200006

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Utah Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS REQUIRED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Rollo'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 30th *day of* September *in the year of our Lord one thousand nine hundred and* ninety-three.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Utah Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
UT84B417-1075

3. VARIETY NAME
Rollo

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
Utah State University
Logan, UT 84322-4810

5. PHONE *(Include area code)*
801-750-2243

FOR OFFICIAL USE ONLY

PVPO NUMBER
9200006

FILING
Date: Oct. 15, 1991
Time: ☐ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $2150.-
Date: Oct. 15, 1991
Certificate Fee: $250.00
Date: Sept. 15, 1993

6. GENUS AND SPECIES NAME
Hordeum vulgare

7. FAMILY NAME *(Botanical)*
Poaceae (Gramineae)

8. CROP KIND NAME *(Common Name)*
Barley

9. DATE OF DETERMINATION
1 January 1991

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
State Agricultural Experiment Station

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Rulon S. Albrechtsen
Plants, Soils, & Biometeorology Dept.
Utah State University
Logan, UT 84322-4820
PHONE *(Include area code)*: 801-750-2243

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. [X] Exhibit A, Origin and Breeding History of the Variety.
b. [X] Exhibit B, Novelty Statement.
c. [X] Exhibit C, Objective Description of Variety.
d. [ ] Exhibit D, Additional Description of Variety.
e. [X] Exhibit E, Statement of the Basis of Applicant's Ownership.
f. [X] Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 26 July 1991
g. [X] Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
[X] YES *(If "YES," answer items 16 and 17 below)* [ ] NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
[X] YES [ ] NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
[X] FOUNDATION [X] REGISTERED [X] CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
[ ] YES *(If "YES," through* [ ] Plant Variety Protection Act [ ] Patent Act. Give date: _____)
[X] NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
[X] YES (If "YES," give names of countries and dates) U.S., 1991
[ ] NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
[signature]	Director, Utah Agricultural Experiment Station	10-7-91
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
[signature]	Vice President for Research, USU	10-7-91

Exhibit A - Origin and Breeding History

Rollo

Summer 1979: Original cross made at Logan, Utah, by Dr. Rulon S. Albrechtsen.
Cross number was UTB417
Parentage = Bracken x UT75B65-532
Bracken = Woodvale 2x Primus x S.D. 67-297
Woodvale = a reselection of Vale
Primus = a South Dakota variety
S.D. 67-297 = a South Dakota breeding line
UTB65 = ID633019 x Woodvale
ID633019 = CI9196 x CI10119 2x Traill

Winter 1979-80: F_1 plants grown in the greenhouse at Logan, Utah.

Summer 1980 through 1982: F_2 through F_4 plants grown at Logan, Utah in modified bulk populations and selected for agronomic and pathologic characteristics. Selected seed was bulked for the succeeding generations.

Summer 1983: F_5 plants grown at Logan, Utah in a modified bulk population and a single head was selected from 350 agronomically and pathologically desirable plants. Seed from individual heads was kept separate.

Summer 1984: Seed from individual heads was grown in F_6 head rows at Logan, Utah where all rows were evaluated for agronomic and pathologic characteristics. Only desirable rows were harvested. UT84B417-1075 was selected for additional testing.

Summer 1985: UT84B417-1075 was yield tested in a single replicate preliminary irrigated yield test at Logan, Utah.

Summer 1986: UT84B417-1075 was yield tested in a replicated advanced irrigated yield test at Logan, Utah.

Summer 1987: UT84B417-1075 was yield tested in irrigated yield tests at five locations throughout Utah's major irrigated barley areas. These tests have continued until the present time (Summer 1991).

Summers 1988 and 1989: UT84B417-1075 was yield tested in the Western Regional Spring Barley Nursery where it was evaluated in tests grown throughout the western U.S. It was the top yielding entry in that nursery both years.

Winter 1989-89: Breeder seed of UT84B417-1075 was produced in a winter increase at Yuma, Arizona from 200 heads selected in 1988. Off type rows were discarded and seed from harvested rows was bulked.

Summer 1989: Foundation seed of UT84B417-1075 was produced at Logan, Utah from Breeder seed produced at Yuma, Arizona in the winter of 1988-89. The Foundation field was rogued heavily for any questionable plants.

Summer 1990: Registered seed of UT84B417-1075 was produced by two selected growers in Utah.

Summer 1991: UT84B417-1075 was named Rollo and was released to selected growers for production of Certified seed.

Rollo is generally uniform and stable.

Exhibit B - Novelty Statement

To our knowledge, Rollo most nearly resembles Bracken, which is one of the parents of Rollo. Differences include, but are not restricted to the following:

1. Rollo heads approximately 2 days later than Bracken (approximately 3 days later than Steptoe).

2. Rollo has glume hair restricted to the middle of the glume; Bracken has very little or no glume hairs.

3. Rollo has a non-glossy head when immature; Bracken has a glossy head.

4. Rollo straw remains intact upon maturity; straw of Bracken becomes brittle upon maturity.

5. Rollo is higher in yield than Bracken.

6. Rollo is 1-2 percentage points lower in protein content than Bracken.

FORM APPROVED: OMB NO. 40-R3822

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Barley)

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY *(HORDEUM VULGARE)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Utah Agricultural Experiment Station

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Utah State University
Logan, UT 84322-4810

FOR OFFICIAL USE ONLY
PVPO NUMBER 9200026
VARIETY NAME OR TEMPORARY DESIGNATION Rollo

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

[1] 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER [3] Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

2. MATURITY (50% Flowering): (Steptoe)

[2] 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

[ ] No. of days *Earlier* than ..... [ ]
[3] No. of days *Later* than ..... [8]
No comparisons with these varieties
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8=Steptoe

3. PLANT HEIGHT (From soil level to top of head): (Steptoe)

[3] 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

[0][0] Cm. *Shorter* than ..... [8]
[0][0] Cm. *Taller* than ..... [8]
No comparisons to these varieties
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8=Steptoe

4. STEM:

[2] Exertion *(Flag to spike at maturity)*: 1 = 0 - 3 cm. 2 = 3 - 10 cm. 3 = 10 - 15 cm.
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[0][.][4] NO. OF NODES (Originating from node above ground)

[1] Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 4 = MODIFIED CLOSED OR OPEN
[3] Shape of Neck: 1 = STRAIGHT 2 = SNAKY 3 = OTHER (Specify) semi-snaky

5. LEAF:

[1] Basal leaf sheath *(seedling)*: 1 = GLABROUS 2 = PUBESCENT
[2] Position of flag leaf *(at boot stage)*: 1 = DROOPING 2 = UPRIGHT
[3] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY
[1][5] MM. WIDTH (First leaf below flag leaf)
[2][3] CM. LENGTH (First leaf below flag leaf)
[1] Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

[2] Type: 1 = TWO-ROWED 2 = SIX-ROWED
[3] Density: 1 = LAX 2 = ERECT (Not dense) 3 = ERECT (Dense)
[2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) ____
[3] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY
[1] Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD
[3] Rachis *(Hair on edge)*: 1 = LACKING 2 = FEW 3 = COVERED

7. GLUME:

[3] Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA
[3] Hairs: 1 = NONE 2 = SHORT 3 = LONG
[2] Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED
[3] Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES most 3 = MORE THAN EQUAL TO LENGTH OF GLUMES
[2] Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

5

9200006

8. LEMMA:

[5] Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike) 5 = LONG (longer than spike) 6 = HOODED

[3] Awn Surface: 1 = AWNLESS 2 = SMOOTH 3 = SEMISMOOTH 4 = ROUGH

[1] Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS

[1] Hair: 1 = ABSENT 2 = PRESENT

[3] Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE

[2] Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

[2] Hairs: 1 = FEW 2 = MANY

10. SEED:

[2] Type: 1 = NAKED 2 = COVERED

[1] Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

[4] Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.) 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

[2] Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

[1] Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

[0][2] PERCENT ABORTIVE

[4][4] GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SEPTORIA	[0] NET BLOTCH	[0] SPOT BLOTCH	[1] POWDERY MILDEW
[R] LOOSE SMUT	[2] BACTERIAL BLIGHT	[2] COVERED SMUT	[0] FALSE LOOSE SMUT
[0] STEM RUST	[0] LEAF RUST	[0] SCAB	[0] SCALD
[0] AY	[2] BSMV	[0] BYDV	[ ] OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

[0] GREEN BUG	[0] ENGLISH GRAIN APHID	[0] CHINCH BUG	[1] ARMYWORM
[1] GRASS HOPPERS	[1] CEREAL LEAF BEETTLE	[ ] OTHER (Specify)	

HESSIAN FLY RACES: [0] GP [0] A [ ] B [ ] C [0] D [0] E [ ] F [ ] G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[ ] DDT [ ] OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Bracken	Seed size	Walker
Leaf size	Bracken	Coleoptile elongation	Bracken
Leaf color	Bracken	Seedling pigmentation	Bracken
Leaf carriage	Bracken		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

Exhibit E - Statement of the Basis of Applicants Ownership

Rollo (UT84B417-1075) was originated and developed by Dr. Rulon S. Albrechtsen, plant breeder at the Utah Agricultural Experiment Station, at Utah State University, Logan, Utah. By agreement between employee and the Utah Agricultural Experiment Station and Utah State University, all rights to any invention, discovery, or development made by an employee are assigned to the employer. No rights to such invention, discovery or development are retained by the employee.